spectrum+ Infrared Heaters

INSTALLATION INSTRUCTIONS

3rd Party Tested Heaters

UL Underwriters Laboratories

SP250/300/350

DISCLAIMER

Spectrum Infrared and its affiliated corporations and subsidiaries (collectively “Spectrum”), intend to make this manual accurate and complete. However, Spectrum makes no claim that the information contained herein covers all details, conditions, or variations, nor does it provide for every possible contingency in connection with the installation or use of this product. The information contained in this document is subject to change without notice or obligation of any kind. Spectrum makes no representation of warranty, expressed or implied, regarding the information contained herein. Spectrum assumes no responsibility for accuracy, completeness or sufficiency of the information contained in this document.

IMPORTANT SAFETY INSTRUCTIONS

WARNING: A WARNING alerts you to the possibility of serious injury or death if you do not follow the instructions.

CAUTION: A CAUTION alerts you to the possibility of damage or destruction of equipment if you do not follow the corresponding instructions.

WARNING: Failure to read, thoroughly understand, and follow all instructions can result in serious personal injury, damage to equipment, or voiding of factory warranty! It is the installer’s responsibility to make sure all components are properly assembled and installed using the instructions provided.

WARNING: Failure to provide adequate structural strength for this accessory can result in serious personal injury or damage to equipment! It is the installer’s responsibility to make sure the structure to which this accessory is attached can support the weight of all equipment.

WARNING: Use this heater only for its intended use as described in these instructions. Do not use attachments not recommended by the manufacturer.

WARNING: Professional installation required.

IMPORTANT!: The SP250/300/350 heaters are designed to be mounted between a wood stud wall that’s 16” on center. Minimum T&G thickness is 11/16”.

NOTE: Spacings - Minimum spacings between the heaters shall be maintained for safe operation of the equipment when installed in accordance with the National Electric Code, ANSI/NFPA 70.

NOTE: When selecting a Listed 120 Vac Receptacle for use as the main power source for the SPC heaters (power supply), make sure that AC Receptacle is rated for the heater installing.

In the U.S., the equipment shall be installed per the applicable requirements of the National Electrical Code, ANSI/NFPA 70.

In Canada, the equipment shall be installed per the applicable requirements of the Canadian Electrical Code, CSA C22.1.

INSTALLATION

SP250/300/350 heaters are intended for use where the wall surface has not been finished and the structural studs are exposed. The wall then must be finished, and the heaters installed in cutouts.

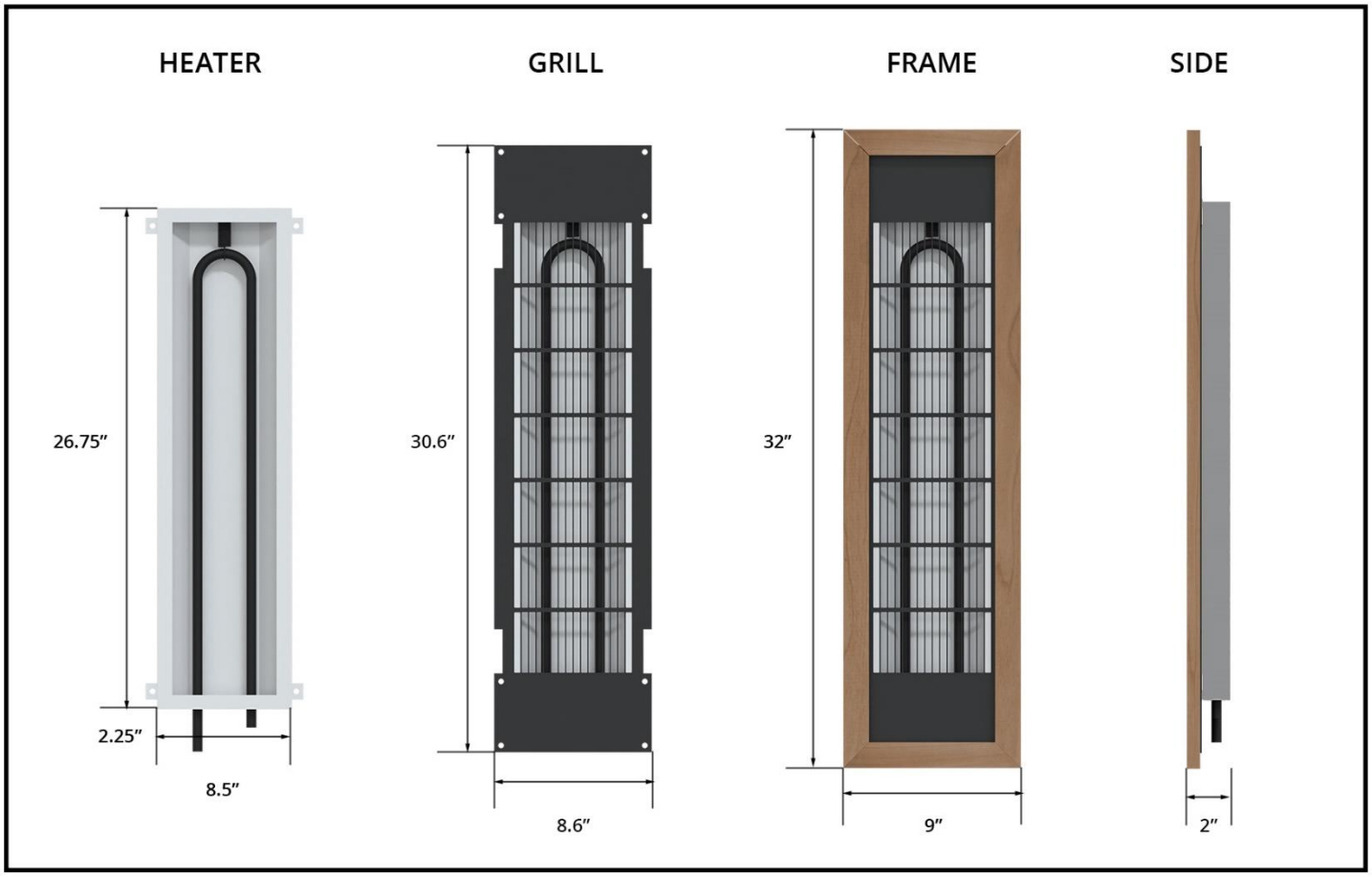
WARNING: All wiring should be performed by a licensed electrician following all local codes and ordinances.

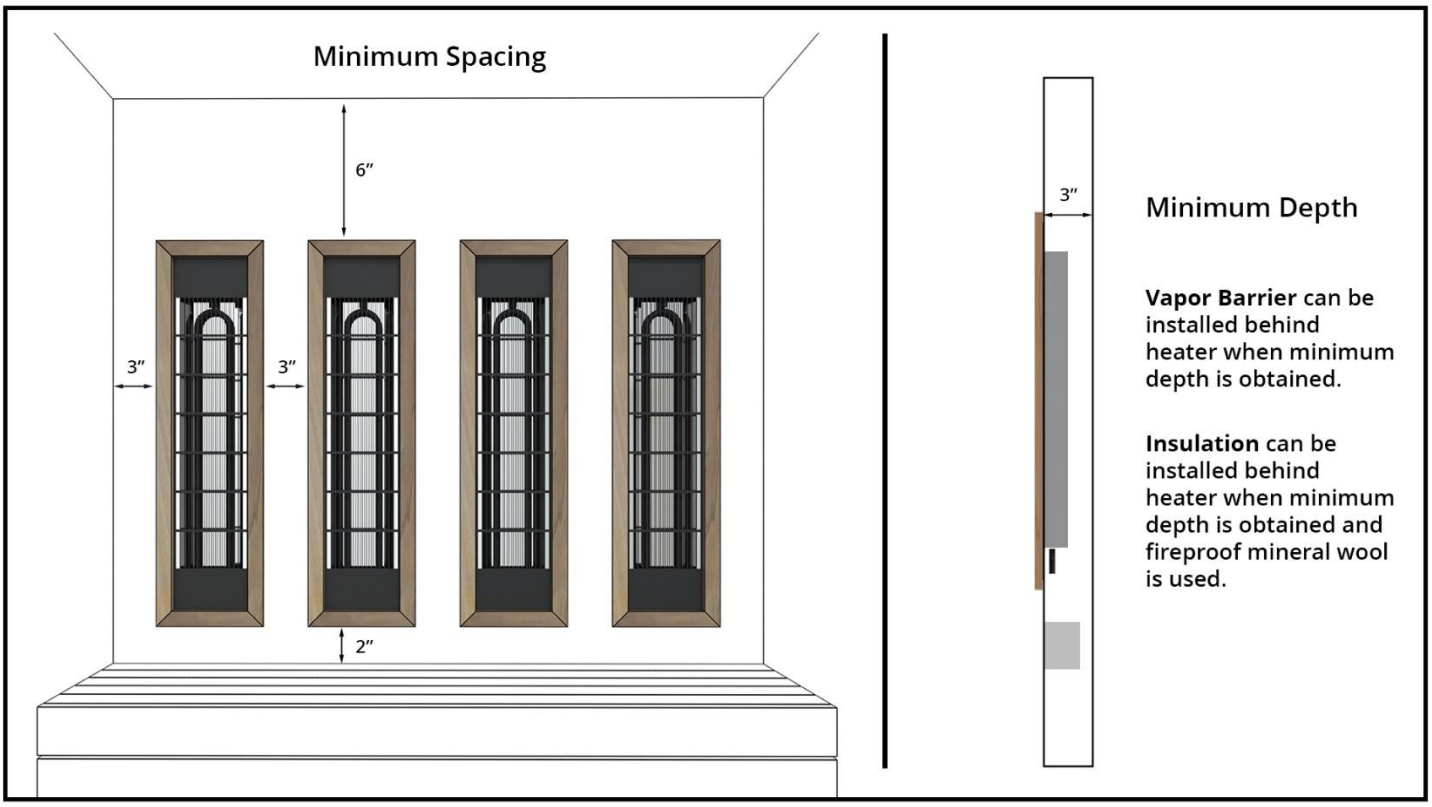
WARNING: ELECTRICAL SHOCK HAZARD! CUTTING OR DRILLING INTO ELECTRICAL WIRES OR CABLES CAN CAUSE DEATH OR SERIOUS PERSONAL INJURY! ALWAYS make certain area behind mounting surfaces is free of electrical wires and cables before cutting, drilling or installing fasteners.

WARNING: EXPLOSION AND FIRE HAZARD! CUTTING OR DRILLING INTO GAS PLUMBING CAN CAUSE DEATH OR SERIOUS PERSONAL INJURY. ALWAYS make certain area behind mounting surfaces is free of gas, water, waste or any other plumbing before cutting, drilling or installing fasteners.

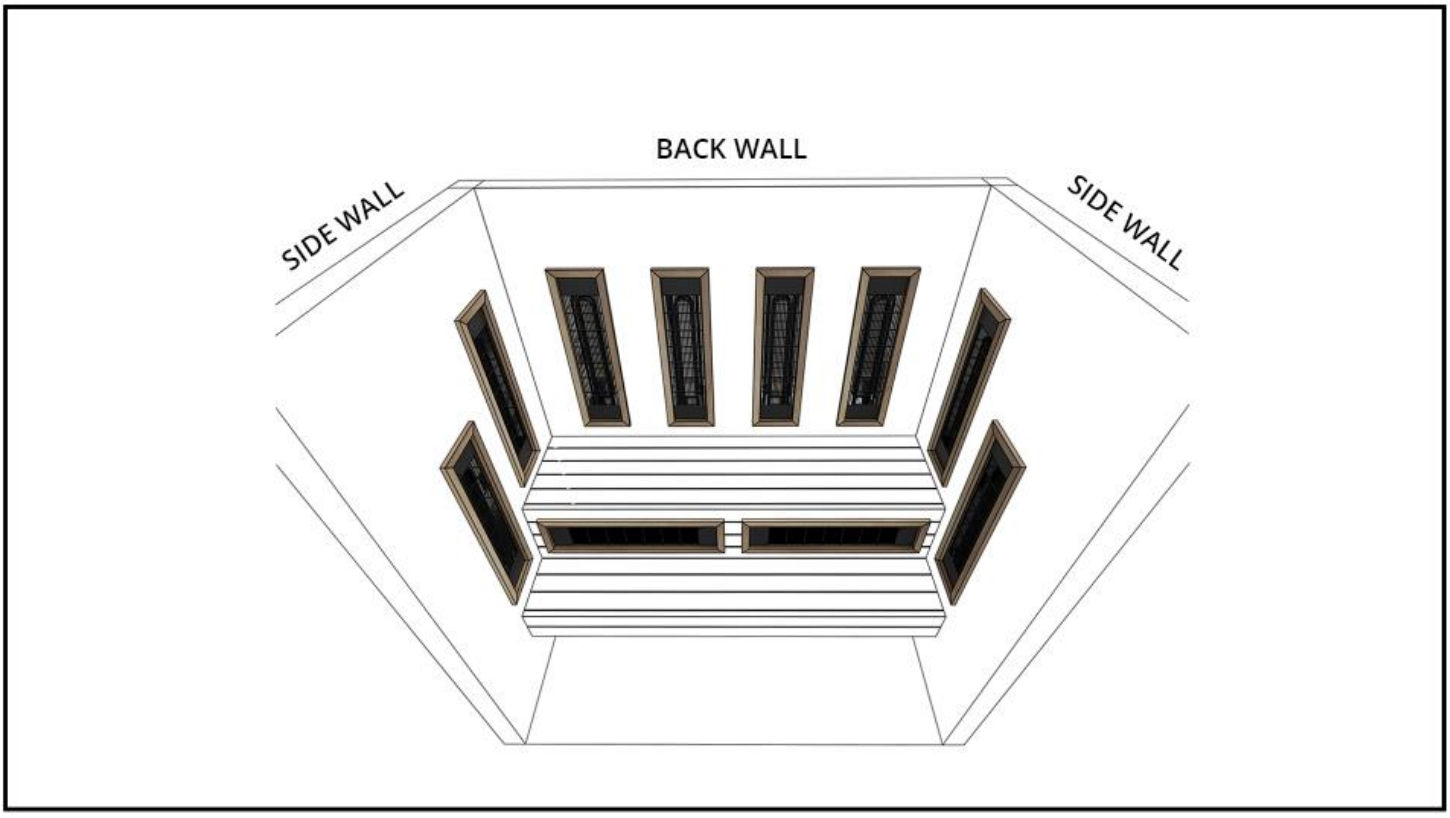
--SAVE THESE INSTRUCTIONS--

HEATER DIMENSIONS & SPACING





LAYOUT

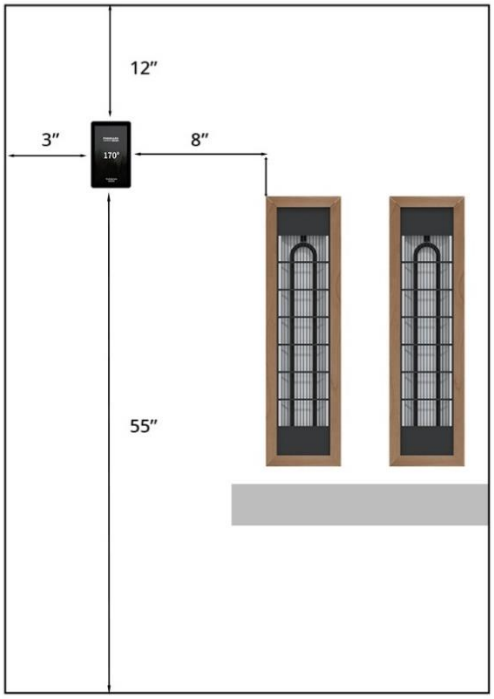


Sauna Size	Back Wall	Side Wall	Bench	Front	Total Heaters	Cubic ft	Watts / Amps / Volts	Required Circuits	Traditional Heater*
3x3x7	2	2	1	0	5	63 ft³	1500 / 12.5 / 120	1	N/A
4x3x7	3	2	0	1	6	84 ft³	1800 / 15 / 120	1	N/A
4x4x7	3	2	1	1	7	112 ft³	2100 / 17.5 / 120	1	Yes
5x3x7	4	2	1	1	8	105 ft³	2400 / 20 / 120	1	Yes
5x4x7L	4	3	1	1	9	140 ft³	3150 / 13.2 / 240	1	Yes
5x4x7	4	4	1	1	10	140 ft³	3500 / 14.6 / 240	1	Yes
5x5x7	4	5	1	1	11	175 ft³	3850 / 16.1 / 240	2	Yes
5x6x7	4	6	1	1	12	210 ft³	3150 / 17.4 / 240	2	Yes
5x7x7	5	5	2	1	12	245 ft³	4550 / 19 / 240	2	Yes
5x8x7	6	5	3	0	14	280 ft³	4900 / 20.5 / 120	2	Yes
5x9x7	7	5	3	0	15	315 ft³	5250 / 22 / 240	2	Yes
5x10x7	8	5	3	0	16	350 ft³	5600 / 23.4 / 240	2	Yes
6x5x7	5	5	2	0	12	210 ft³	4200 / 17.4 / 240	2	Yes
6x6x7	5	6	2	0	13	252 ft³	4550 / 19 / 240	2	Yes
6x7x7	5	6	2	1	14	294 ft³	4900 / 20.5 / 240	2	Yes
6x8x7	6	6	3	0	15	336 ft³	5600 / 22 / 240	2	Yes
6x9x7	7	6	3	0	16	378 ft³	5600 / 23.4 / 240	2	Yes
6x10x7	8	6	3	0	17	420 ft³	5950 / 24.8 / 240	2	Yes

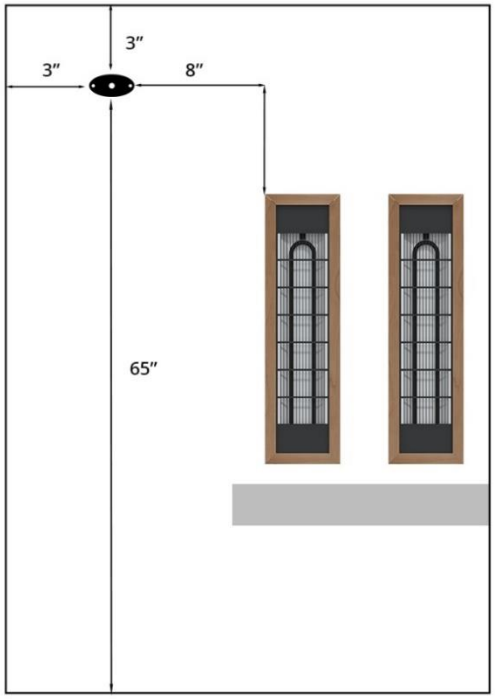
*****Traditional heaters can only be used in combination with Spectrum Plus IR heaters. Adding carbon panels to a traditional heater sauna voids all warranties.

CONTROLLER & SENSOR

Controller Spacing
(Minimum)

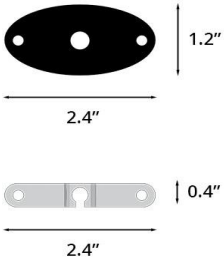


Sensor Spacing
(Minimum)

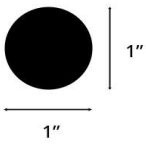


V2 Controller

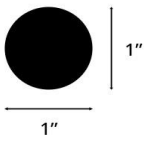
Sensor Hardware



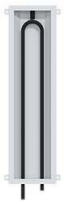
Wire Hole



Wire Hole



PARTS INCLUDED



UL Listed
Infrared Heater

Stainless Steel
Heater Cover

Cedar Wood
Frame

ETL Listed
Power Supply

UL Listed
Power Cable (9ft)

(6) C14
Whips (3ft)

Grounding screw installed at factory.

Earthing symbol IEC 60418 No. 5019 affixed adjacent to grounding terminal.

COMPONENTS NEEDED FOR OPERATION

V2 LCD
Controller

V2 LCD
WiFi Controller

OPTIONAL PARTS PER CUSTOM CONFIGURATION (NOT INCLUDED)

Conduit Connectors

Conduit Pipe 1/2" or 1"

Junction Box

MC Connectors

MC Fastner

MC Cable

CONFIGURATION EXAMPLES


4x4


4x5


4x6


5x5


5x6


5x7


6x6


6x7


6x8

NOTE: Configuration examples are based on achieving 170-degree temperatures without utilizing a traditional heater (combination). For combination saunas, the number of infrared panels can be lowered if the primary goal is to use both the infrared and traditional heaters at the same time.

NOTE: To achieve the ultimate sauna experience, maximize your infrared and traditional heater quantities. The sauna temperature can always be adjusted to lower the temperature.

STUD LAYOUT

PLANNING YOUR STUDS

Carefully plan your stud configuration. Your studs must coincide with your heater layout as each heater requires a minimum **3” depth** for proper installation and ventilation.

Common 16” on center stud spacing can be used for most builds. For uncommon spacing or angles, adjust your studs to accommodate each heater.

*Each heater should be 2” above the seating surface of the sauna bench. This calculation should be made during the stud planning process.

**This is an example of stud placement. Your configuration may require additional bracing based on bench configurations or local building codes.

JUNCTION BOX LOCATIONS

JUNCTION BOX LOCATIONS

A metal junction box should be located under each heater for safety and code compliant access.

The top connection to your junction box should be metal conduit pipe. Heater connections can be standard flexible conduit.

*Use 4” junction boxes for easier wiring access.

**Use a minimum of 12awg cable for best heater performance.

POWER SUPPLY LOCATION

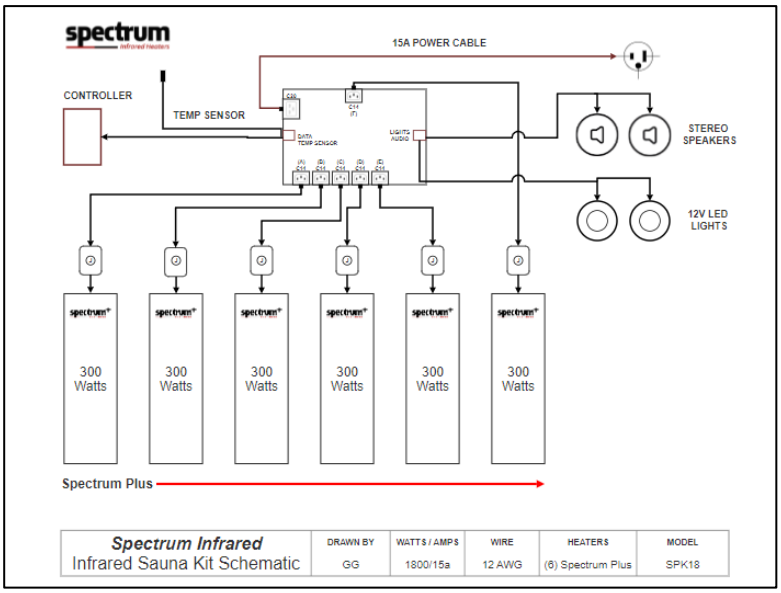
POWER SUPPLY LOCATION
The power supply unit should be placed in an accessible location within 118” of the sauna controller.

For infrared only saunas, the power supply can be mounted within the sauna in a covered location (e.g., under a removable benchtop).

For infrared and traditional applications, the power supply must be mounted outside of the sauna (e.g. next to the subpanel).

There will need to be a 1.5” diameter access hole made to run the power cable to the wall outlet.

POWER SUPPLY HEATER CONNECTIONS



WIRES TO POWER SUPPLY
Carefully follow the wiring schematic to ensure proper wire configuration.

Use the proper gauge wiring per heater load and run length.

*To ensure low EMI/EMF readings, all heaters must be wired with metal flexible conduit.

**For access, make the tops of your sauna benches removable for wiring access in the future.

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DATA CABLE FOR CONTROLLER

CONTROLLER DATA CABLE
Your controller location should be within 118” of the red power supply box.

Connect your data cable to the power supply and secure the end of the wire to the stud location where your controller will be mounted.

*We recommend using a medal pipe or channel to run this cable and your temperature sensor for easy replacement if necessary.

**Your data cable can be extended on site to obtain an additional 60”.

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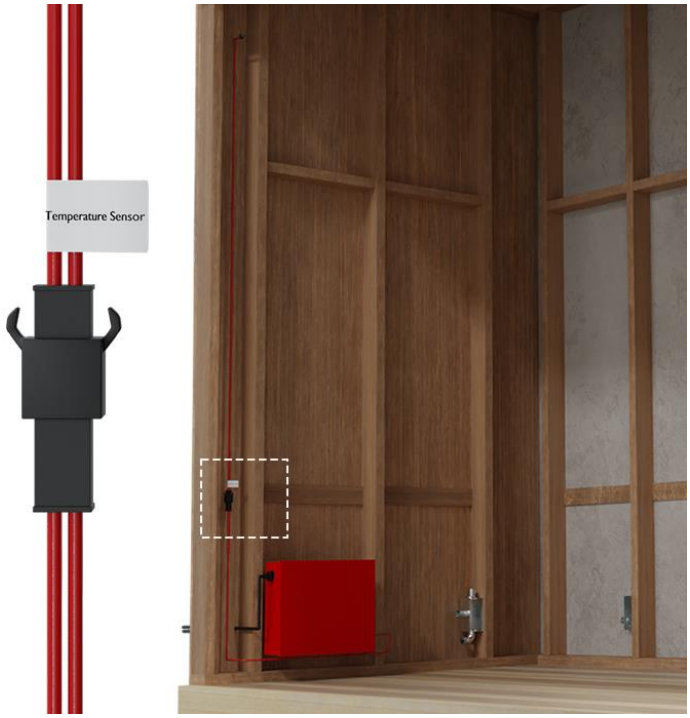
TEMPERATURE SENSOR



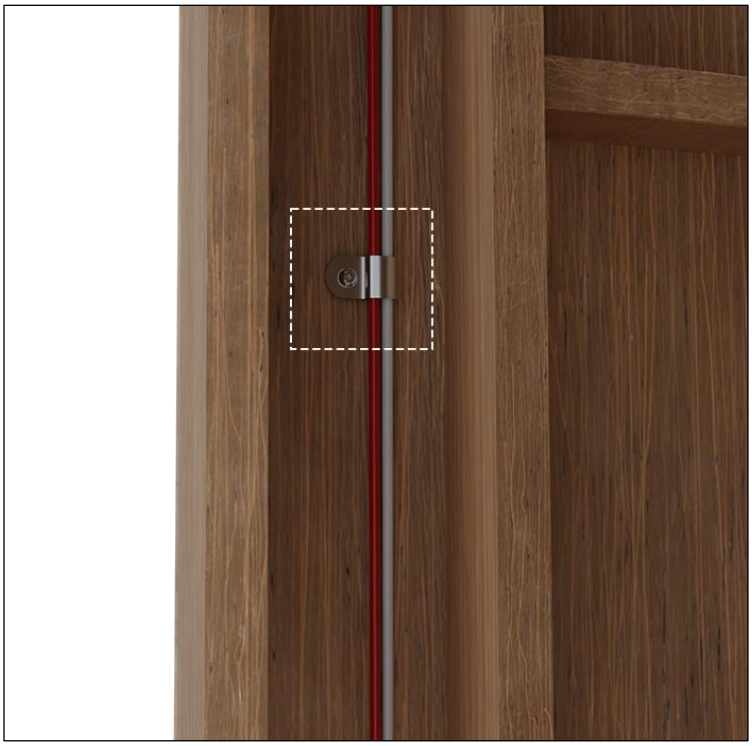
TEMPERATURE SENSOR CABLE
Your temperature sensor should be within 118” of the red power supply box.

Connect your sensor wire to the power supply and secure the end of the wire to the stud location where your sensor will be mounted.

*Wires don’t often fail, however we recommend using a medal pipe to run this cable and your controller data cable for easy replacement if necessary.

**Your temperature sensor cable can be extended on site to obtain an additional 100”.

HEATER CONNECTIONS



SECURE SENSOR AND CONTROL WIRE
Secure both wires to the adjacent stud to connect to components in the future.

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HEATER FOIL VAPOR BARIER

VAPOR BARRIER INSTALLATION
For the best heater performance, install vapor barrier in each heater cavity. This step is not required but recommended.

*Insulation can be added behind the heater for added thermal retention. Only fire retardant/ high heat insulation (rock wool) should be installed.

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INSULATION

INSTALL INSULATION
Place insulation in all stud sections except for heater pockets.

*Insulation can be added behind the infrared heaters by using rockwool that is fire retardant / resistant.

**For outdoor applications or an outdoor exposed wall, use the highest R value within your budget.

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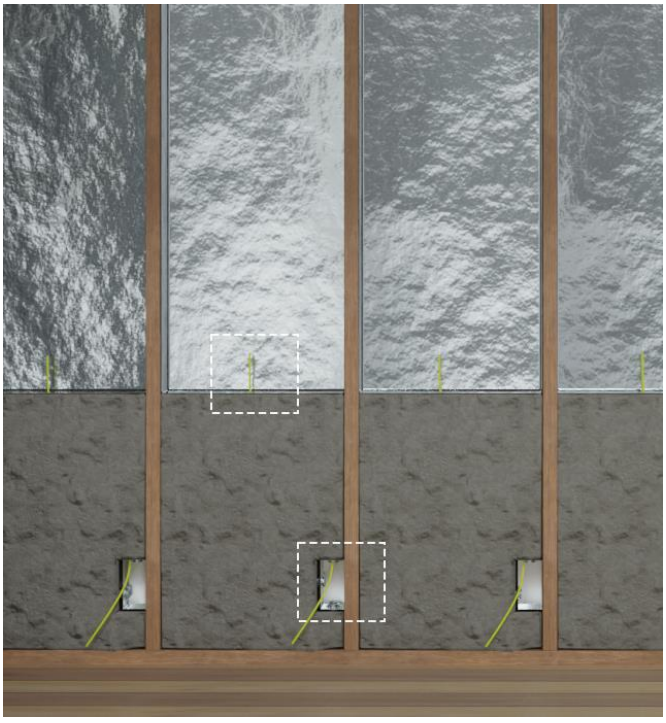
FISH WIRE



FISH WIRE
Run your fish wire from the Junction box to your heater cavity.

VAPOR BARRIER

FINAL VAPOR BARRIER
Apply your final application of vapor barrier.

INSTALL CLADDING

CLADDING INSTALLATION
Install cladding, cutting the boards to coincide with your heater pockets/ layout.

*Cladding can be installed either vertically or horizontal without effecting the integrity of the sauna heaters.

**Fish wire should be secured to the heater cavity.

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INSTALL HEATER

INSTALL HEATER AND WIRE
Place your Spectrum Plus™ heater into the cavity. Route the heater power wires into your junction box. Make your power connections.

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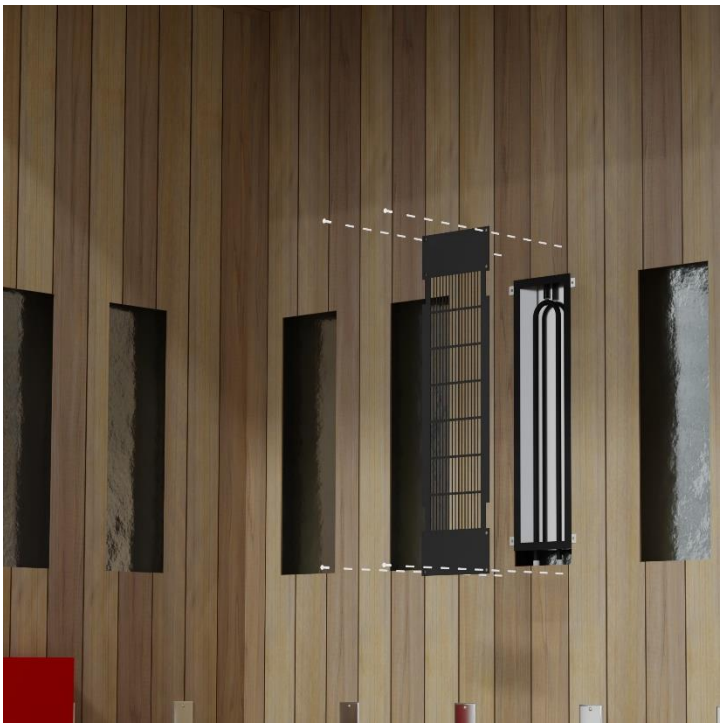
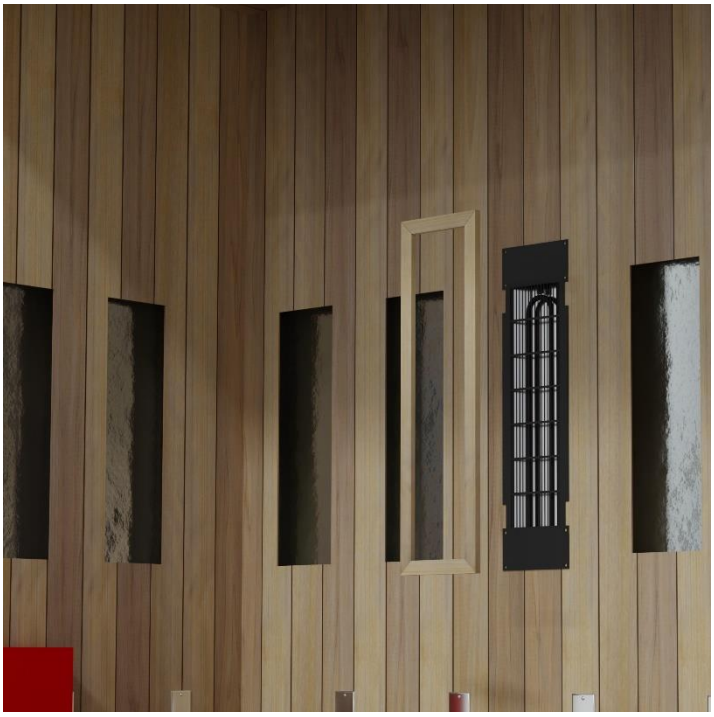
INSTALL HEATER COVER



INSTALL HEATER COVER
Install the lower cladding and heater grill with (4) wood screws.

WOOD FRAME



INSTALL WOOD FRAME
Place your Spectrum Plus™ heater into the cavity, connect your wires, and secure using (4) wood screws or finishing nails.

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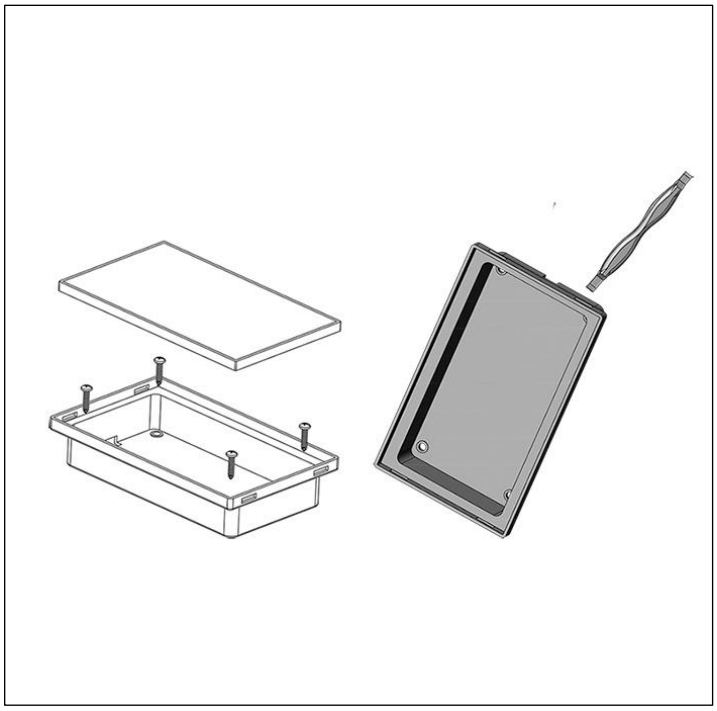
BACKREST EXAMPLES

*Backrests can be installed on the surface of the heater frame, no gaps needed.
**For proper support, use additional bracing between each heater.
***For optimal performance, limit covering heaters by more than 50%.

CONTROLLER CASE



OPEN THE CONTROLLER CASE
Using a pick tool or a small flat head screw driver push down on the clips found on top of the controller's case.

Tip: Push at an angle to ensure the screw driver doesn't push into the screen's circuit board.

INSTALL CONTROLLER

INSTALL CONTROLLER

Follow the control panel mounting instructions to ensure proper installation.

Using a pick tool or a small flat head screw driver push down on the clips found on top of the controller's case.

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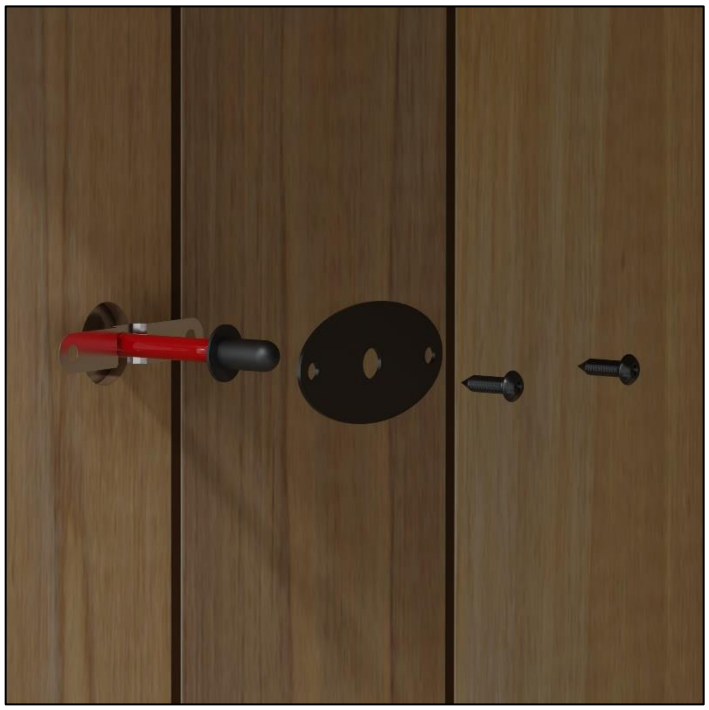
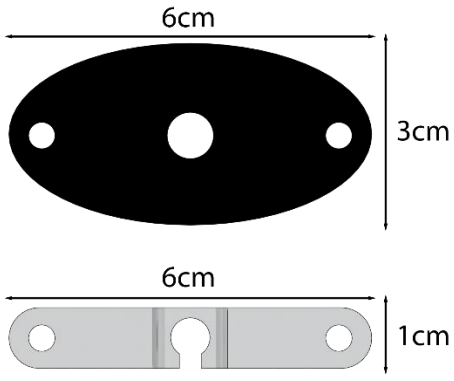
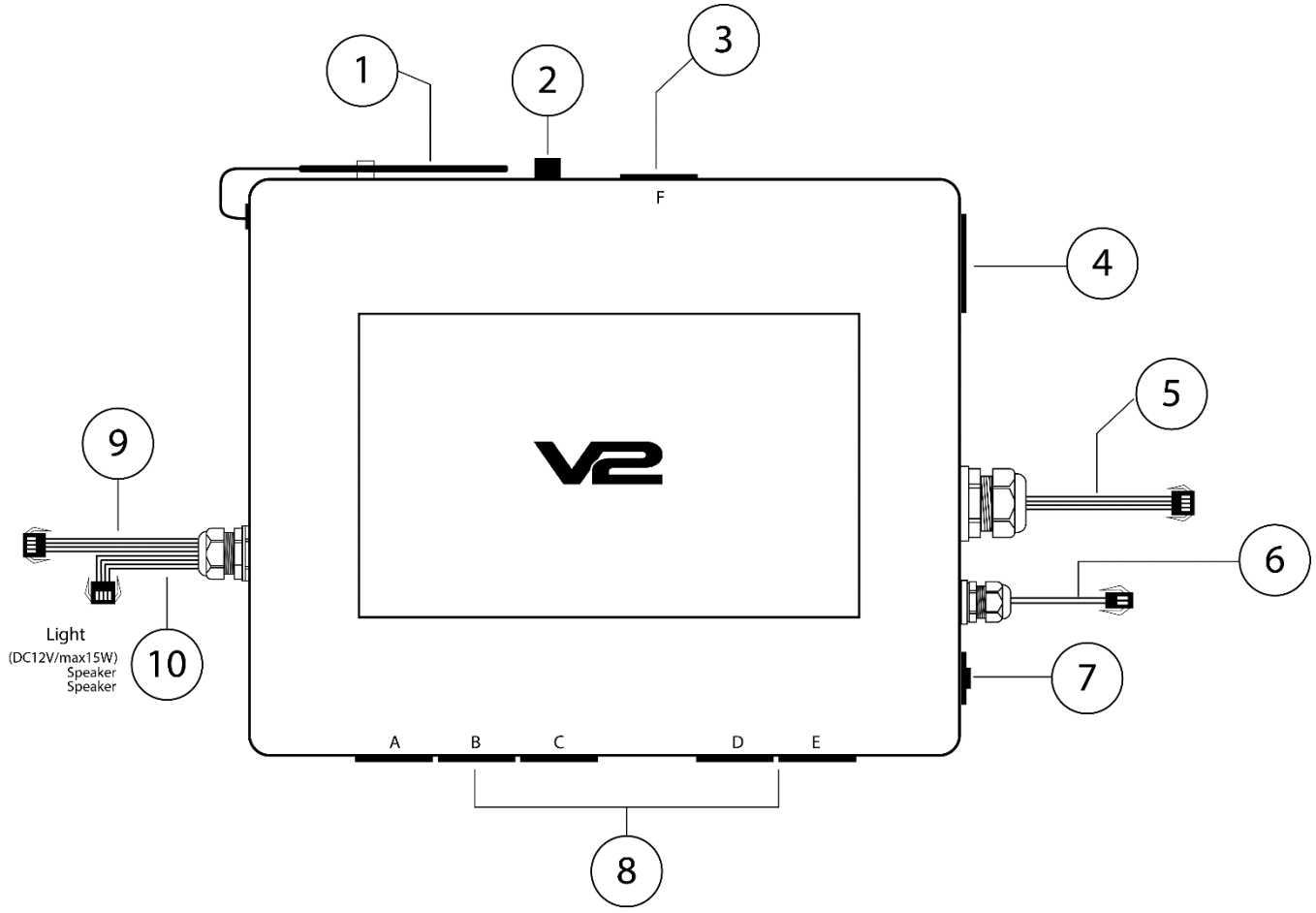
MOUNT TEMPERATURE SENSOR



TEMPERATURE SENSOR
Using provided parts, mount your temperature sensor.

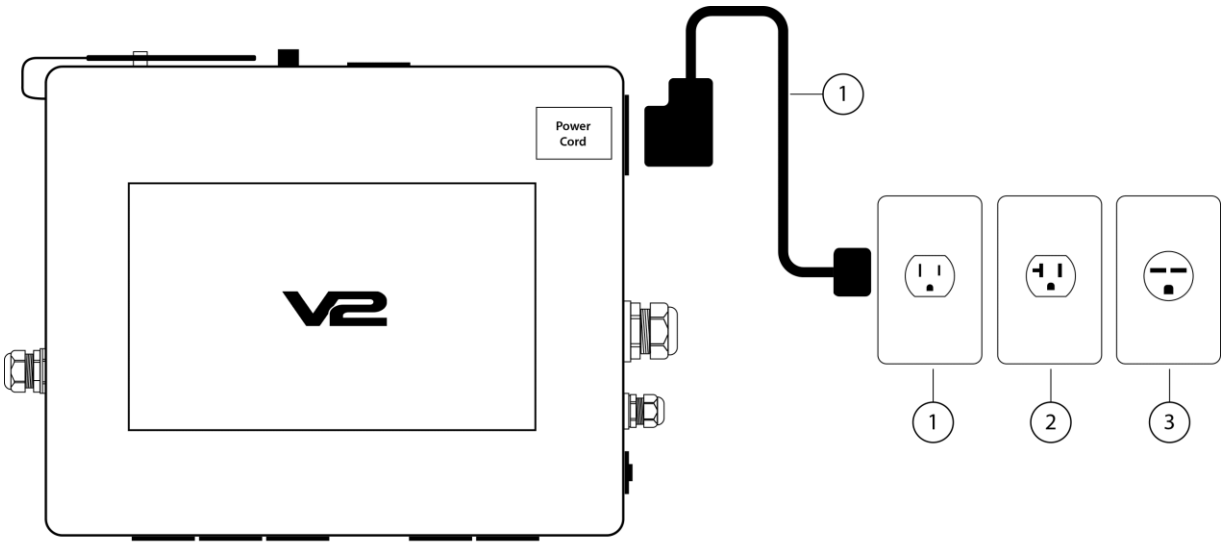


V2 POWER SUPPLY



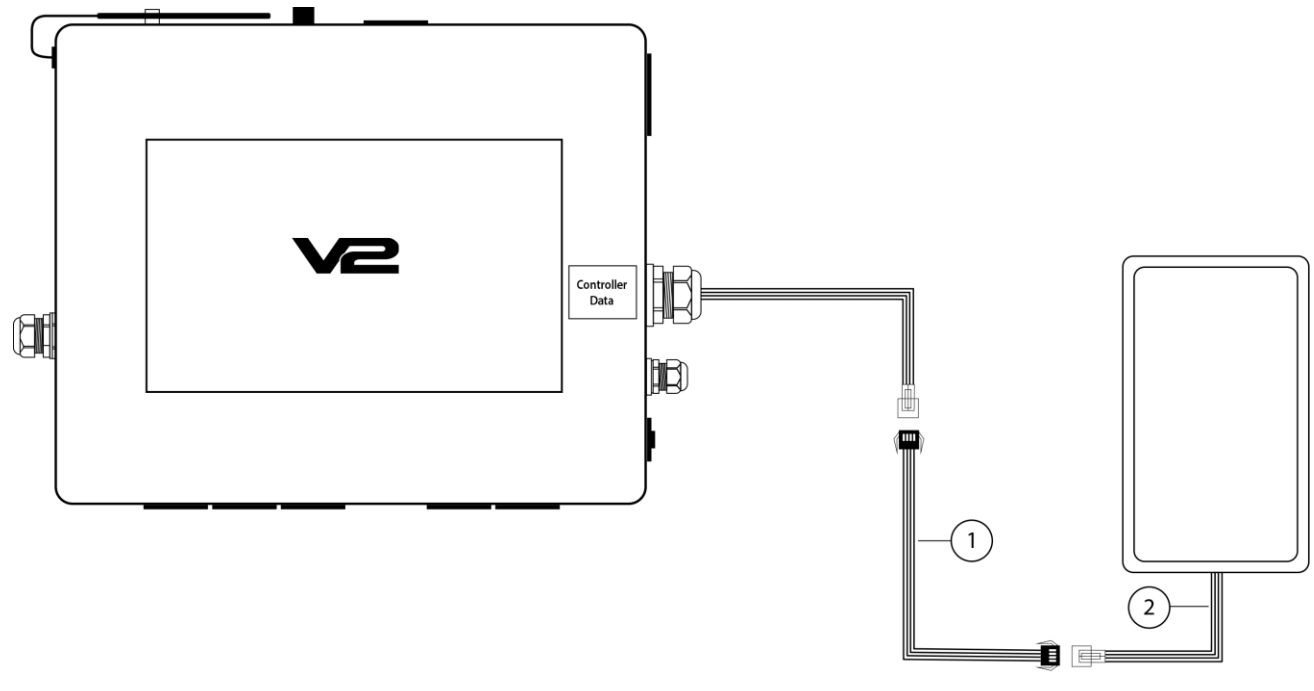
Item No.	Item Discription	Type	Specifications
1	High Limit Protection Switch	Reset Switch	1/4" D Bulb
2	High Limit Protection Reset Cap - Unscrew Cap to Access Reset	Reset Cap Cover	Red Cap
3	Heater (F) Connection	IEC 60320 (C-13)	Female Receptacle
4	Power Cable Connection	IEC 320 C20 Socket	15/20a - 120/240v
5	Controller Data Connection	4-Pin Connector	23" Cable with Connector
6	Temperature Sensor Connection	2-Pin Connector	5" Cable with Connector
7	Breaker Protection Reset - Press to reset	Reset Switch	Internal Breaker
8	Heater (A,B,C,D,E) Connections	IEC 60320 (C-13)	Female Receptacles
9	Speaker Cable Connection	4-Pin Connector	5" Cable with Connector
10	LED Lighting Connection	4-Pin Connector	5" Cable with Connector

V2 POWER CONNECTION



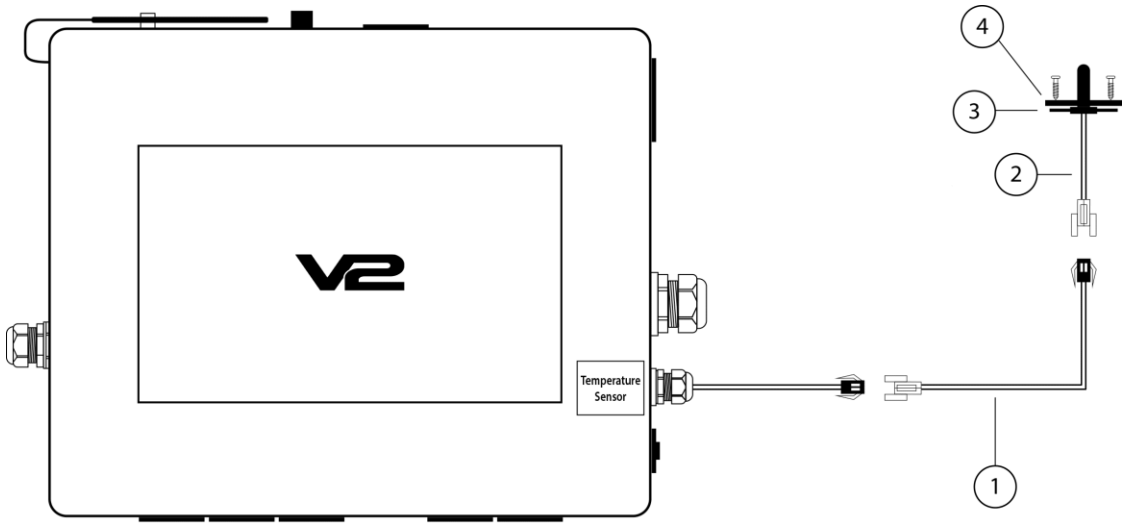
Item No.	Item Image	Item Description	Length	SKU
1		15a 120v Power Cable - C19 to NEMA 5-15P	15 Feet	15PC
2		20a 120v Power Cable - C19 to NEMA 5-20P	15 Feet	20PC
3		15a 240v Power Cable - C19 to NEMA 6-15P	15 Feet	240PC

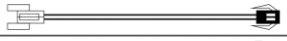
V2 CONTROLLER WIRING



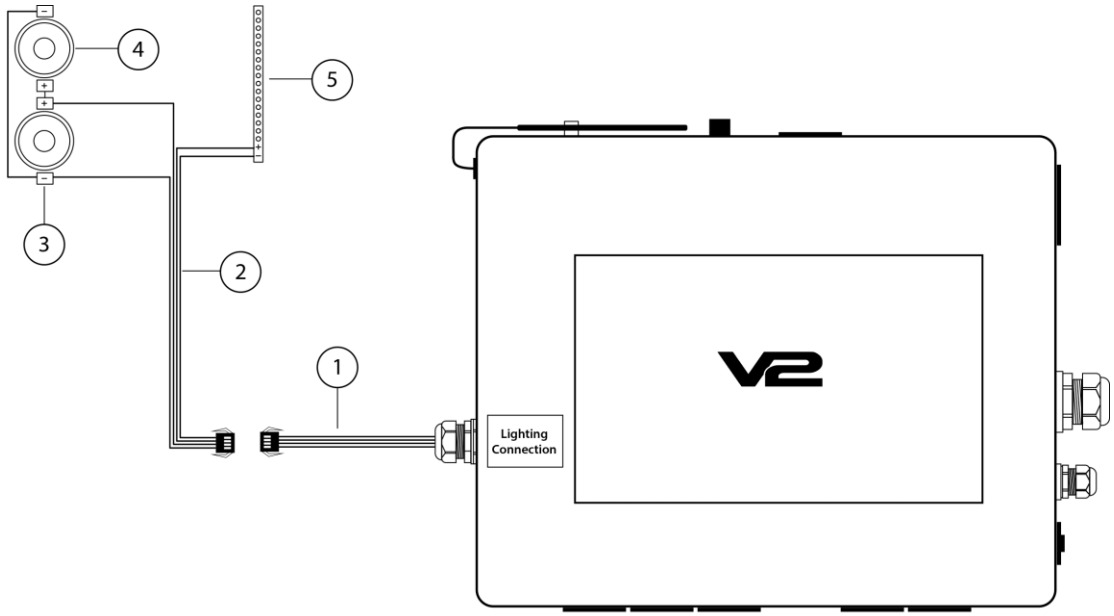
Item No.	Item Image	Item Description	Length	SKU
1		4-Pin Data Extension Cable	63 Inches	V2DC
2	Controller	4-Pin Controller with Cable	36 Inches	V2LCDC

V2 TEMPERATURE SENSOR



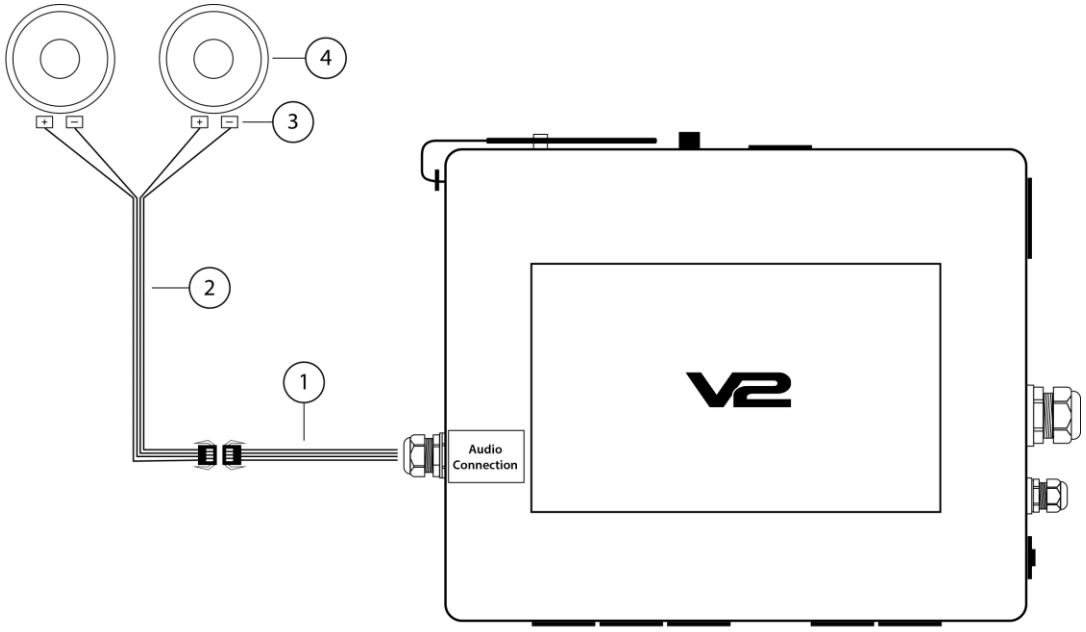
Item No.	Item Image	Item Description	Length	SKU
1		2-Pin Temperature Sensor Extension Cable	80 in	FD-TS2
2		2-Pin Temperature Sensor - K6	34.5 in	V2TS
3		Temperature Sensor Mount Holder	2.3 in x 0.4 in	V2TSM
4		Temperature Sensor Plate	2.3 in x 1.2 in	V2TSM

V2 LIGHTING (12V)



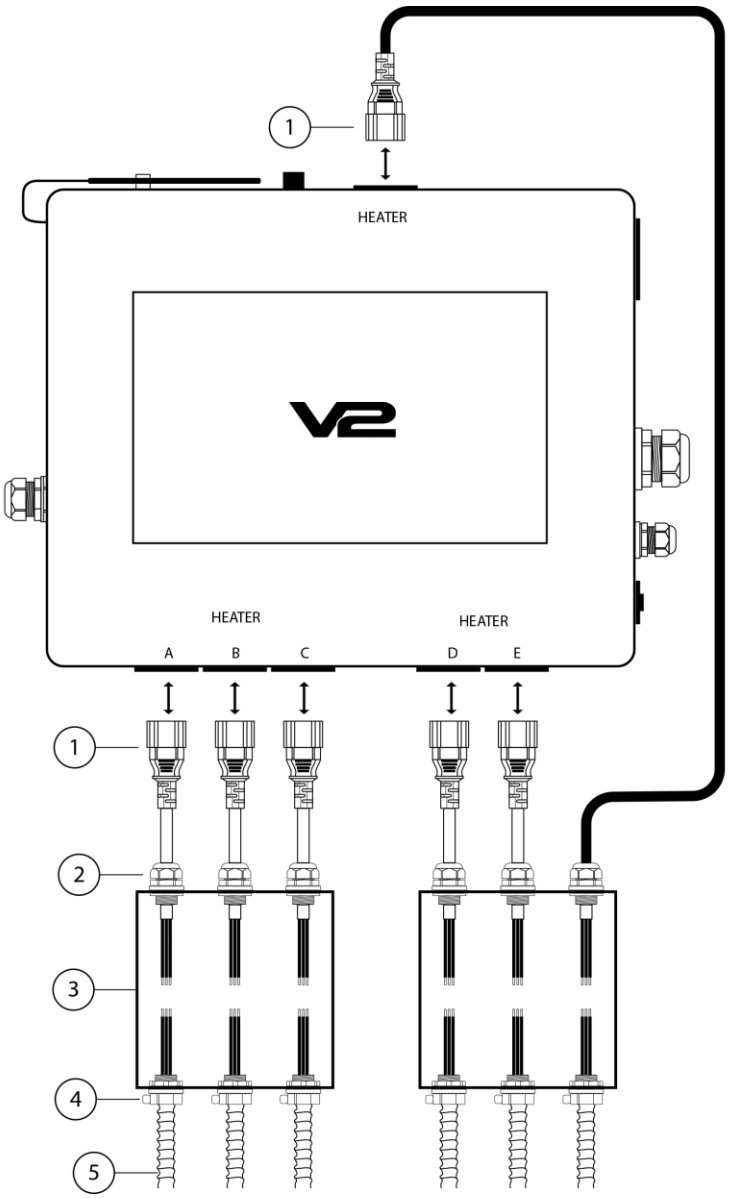
Item No.	Item Image	Item Description	Length	SKU
1		4-Pin Attached Lighting Cable	5 in	N/A
2		4-Pin Lighting Cable	180 in	V2PC
3		Ring Terminal (Not Included)	N/A	N/A
4		12v LED Puck Lights (Optional)	N/A	LEDBRGB
5		12v LED Strip Light (Optional)	N/A	LEDSTRP

V2 AUDIO



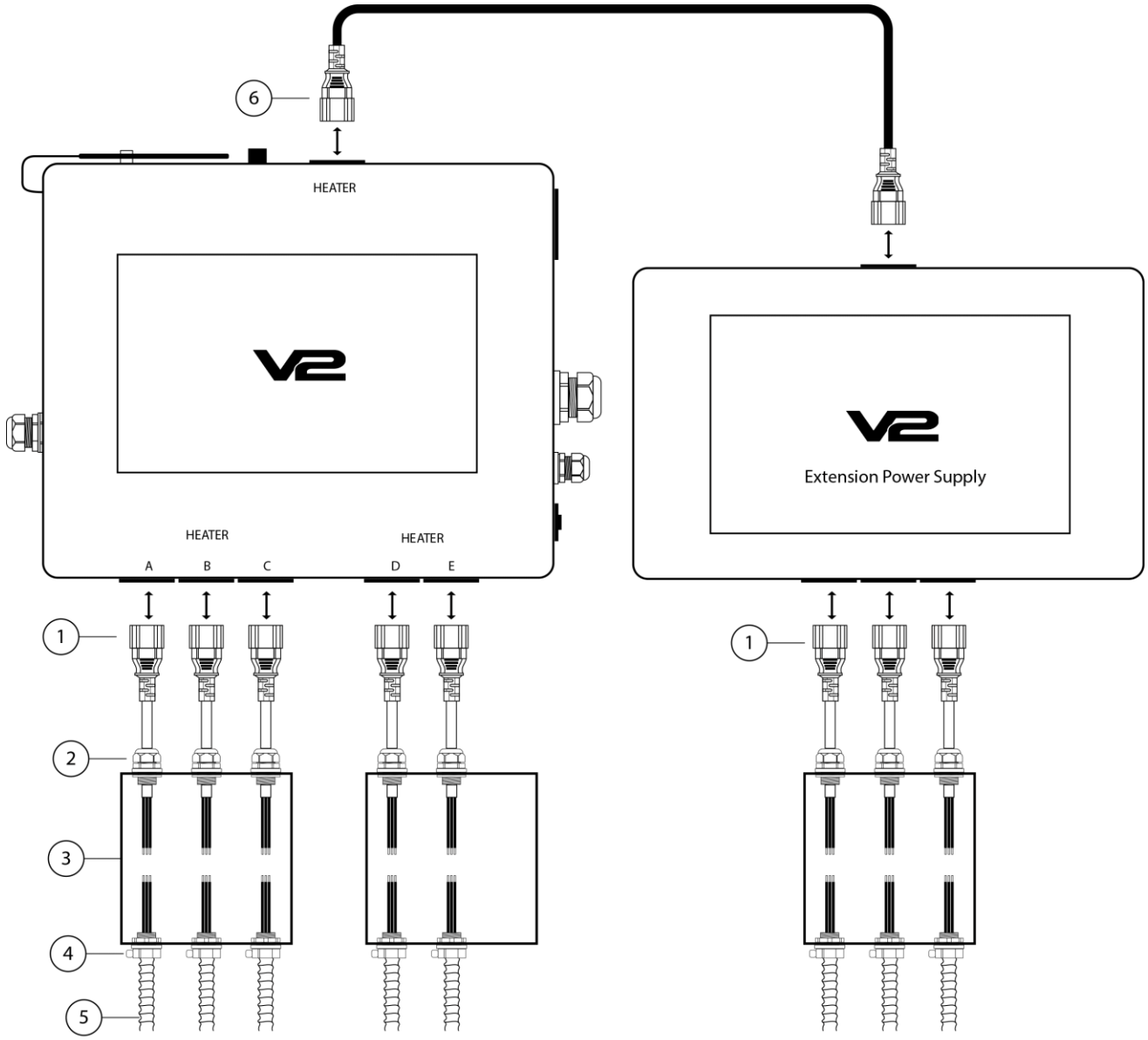
Item No.	Item Image	Item Description	Length	SKU
1		4-Pin Attached Audio Cable	5 in	N/A
2		4-Pin Audio Cable	180 in	AC-180
3		Ring Terminal (Not Included)	N/A	N/A
4		Marine Grade Audio Speakers (Optional)	6 in	SPKR6M

V2 HEATER WIRING



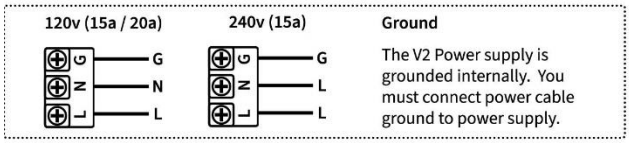
Item No.	Item Image	Item Description	Length	SKU
1		IEC320 C14 Whip Cable	36 in	C14-1
2		Metal Cable Gland	N/A	N/A
3		4" Galvanized Steel Square Electrical Box	4 in	N/A
4		AC/MC Connector	N/A	N/A
5		MC Cable	Cut to Length	N/A

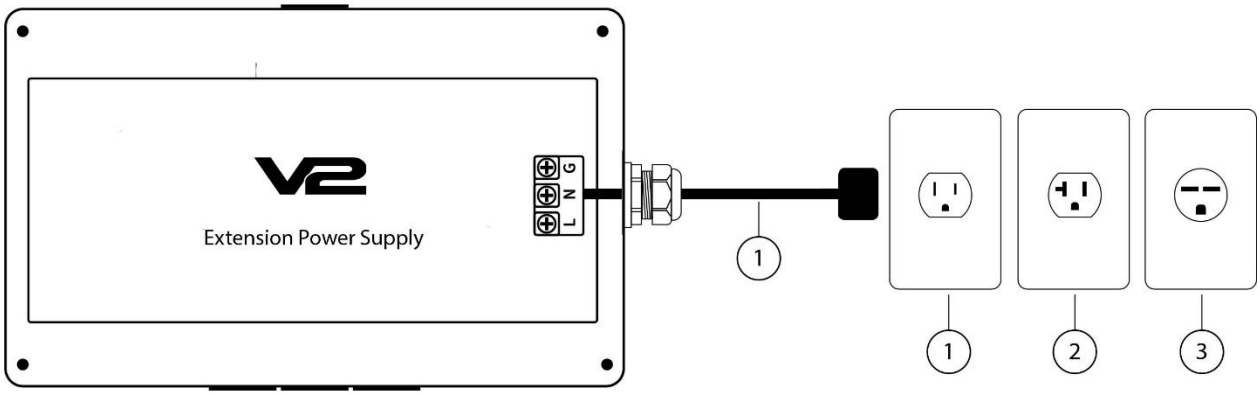
V2 HEATER WIRING WITH EXTENSION BOX



Item No.	Item Image	Item Description	Length	SKU
1		IEC320 C14 Whip Cable	36 in	C14-1
2		Metal Cable Gland	N/A	N/A
3		4" Galvanized Steel Square Electrical Box	4 in	N/A
4		AC/MC Connector	N/A	N/A
5		AC/MC Connector	Cut to Length	N/A
6		IEC-320 C13 to C14	72 in	6EC

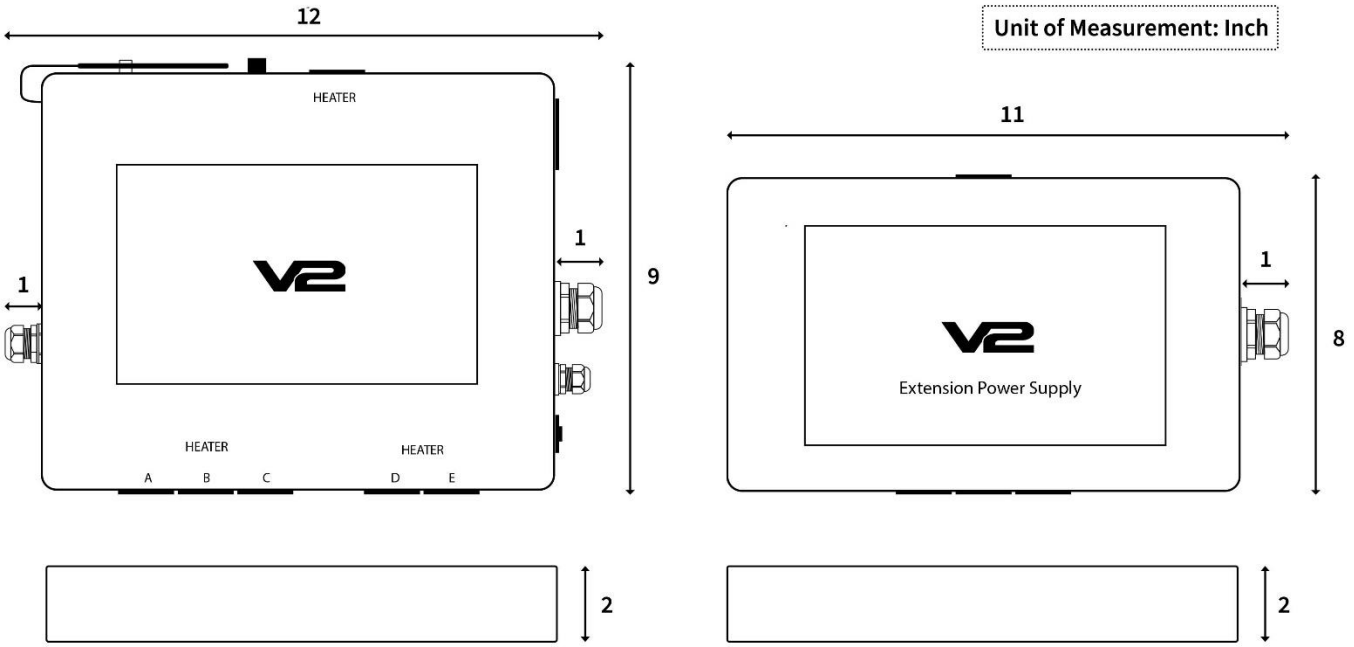
V2 EXTENSION BOX WIRING



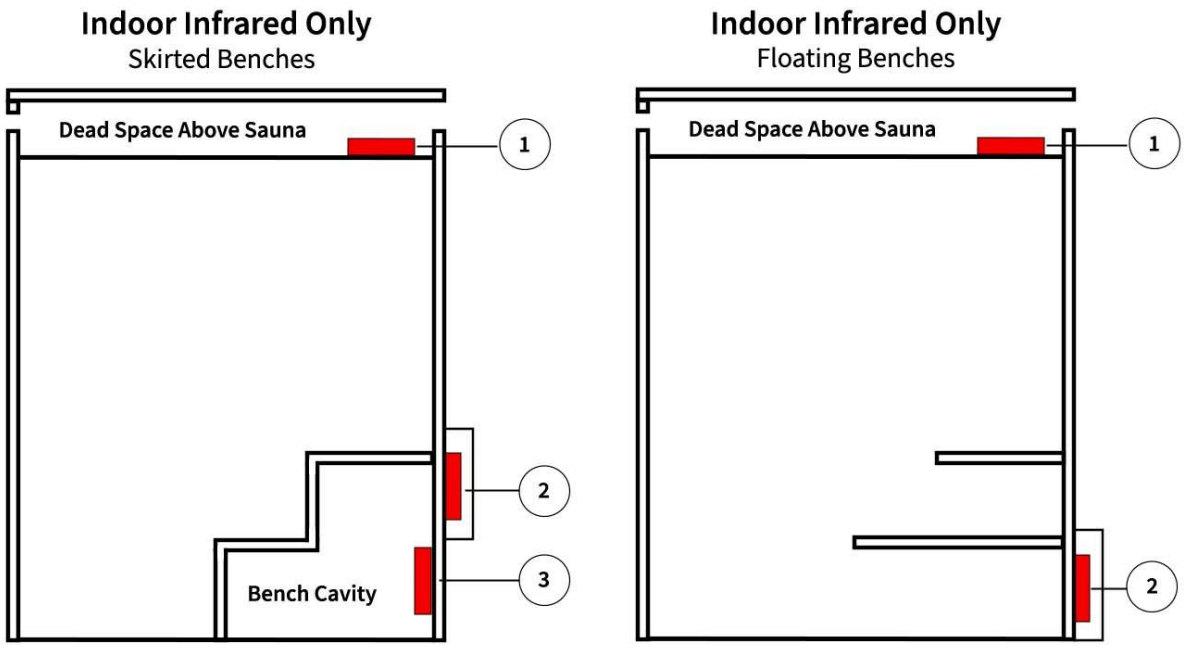


Item No.	Item Image	Item Description	Length	SKU
1		15a 120v Power Cable - C19 to NEMA 5-15P	15 Feet	15PC
2		20a 120v Power Cable - C19 to NEMA 5-20P	15 Feet	20PC
3		15a 240v Power Cable - C19 to NEMA 6-15P	15 Feet	240PC

POWER SUPPLY MEASUREMENTS

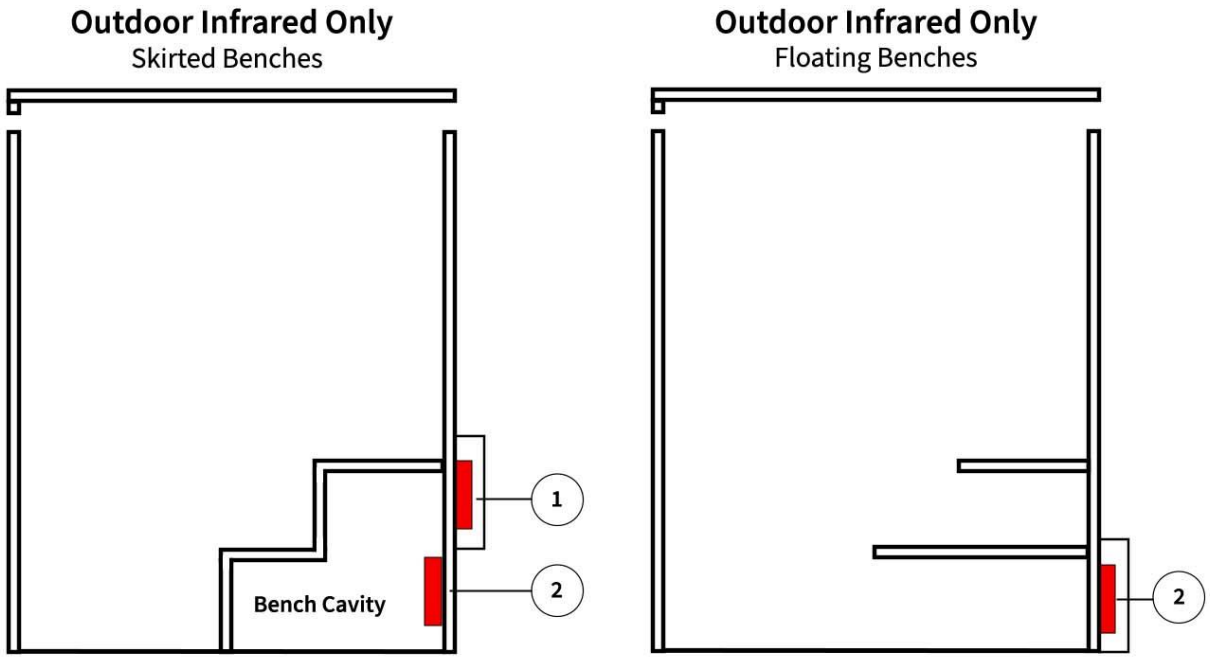


INDOOR POWER SUPPLY LOCATION (INFRARED ONLY)



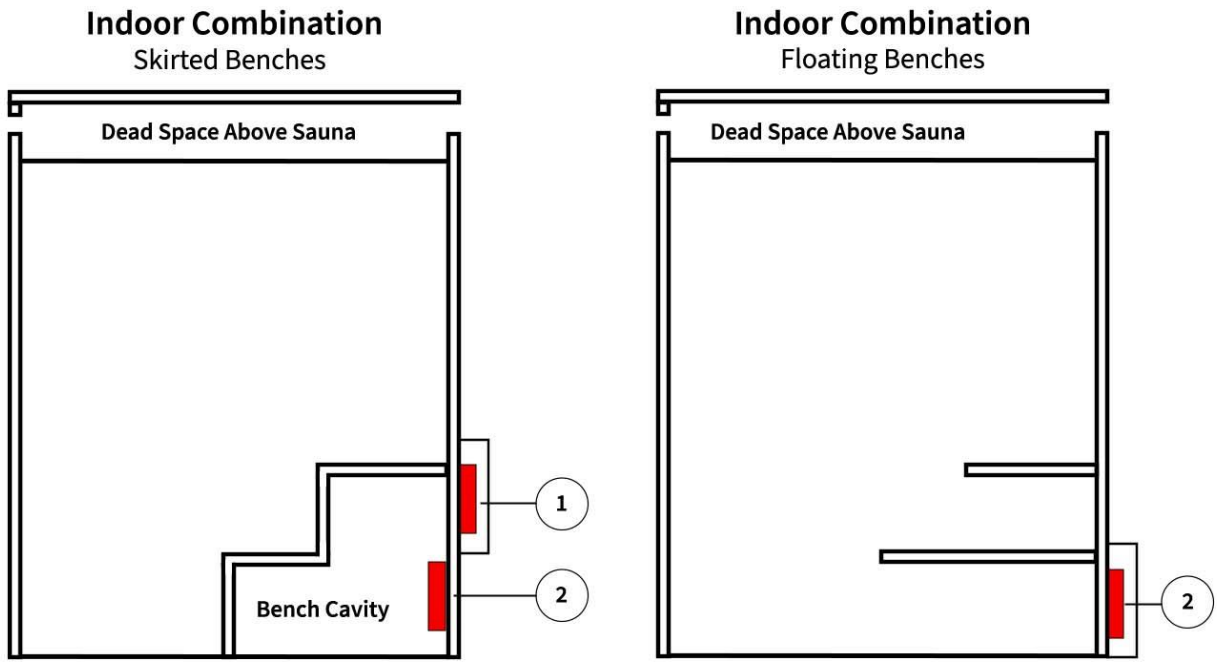
Item No.	Location	Installation Notes
1	Dead Space Above Sauna	If dead space above sauna is available due to furring down ceiling. Must create access panel.
2	Outside Sauna Room	Exterior compartment, ensure proper ventilation and access.
3	Bench Cavity	Must be skirted benches, ensure access from removable bench skirt or bench top.

OUTDOOR POWER SUPPLY LOCATION (INFRARED ONLY)



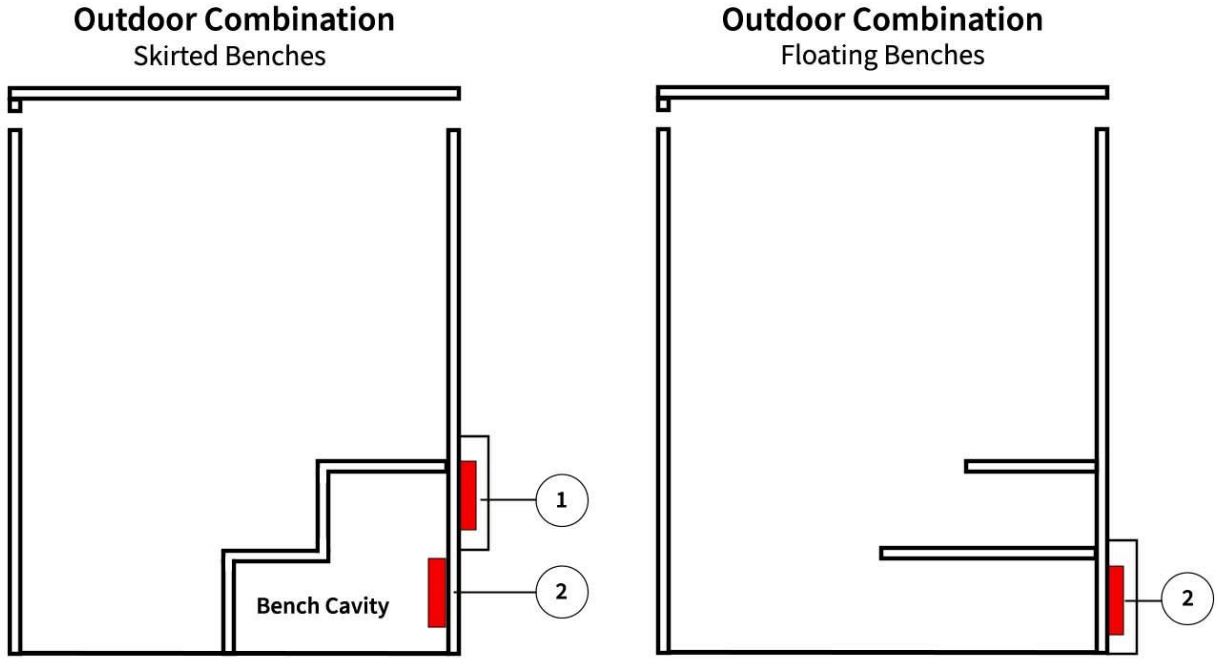
Item No.	Location	Installation Notes
1	Outside Sauna Room	Waterproof exterior access panel.
2	Bench Cavity	Must be skirted benches, ensure access from removable bench skirt or bench top.

INDOOR POWER SUPPLY LOCATION (COMBINATION)



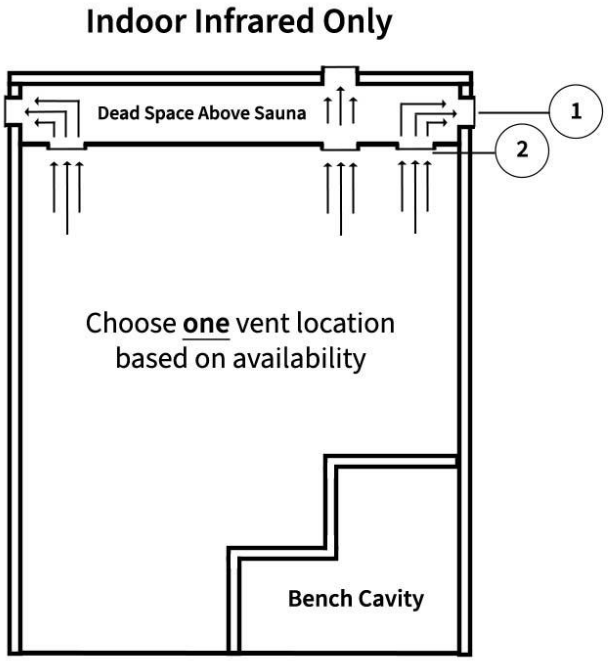
Item No.	Location	Installation Notes
1	Bench Cavity	Must be skirted benches, ensure access from removable bench skirt or bench top.
2	Outside Sauna Room	Exterior compartment, ensure proper ventilation and access.

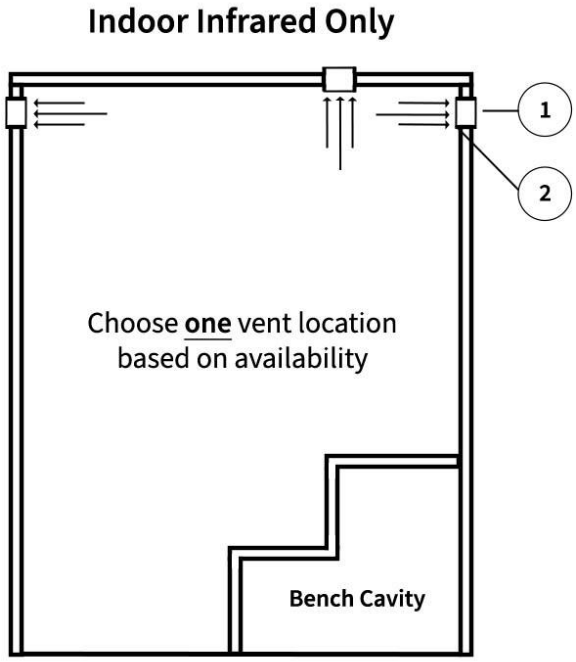
OUTDOOR POWER SUPPLY LOCATION (COMBINATION)



Item No.	Location	Installation Notes
1	Outside Sauna Room	Waterproof exterior access panel.
2	Bench Cavity	Must be skirted benches, ensure access from removable bench skirt or bench top.

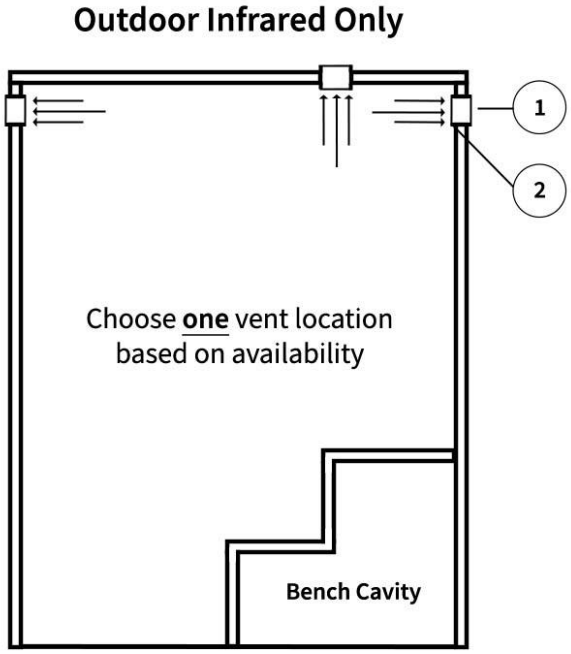
INDOOR VENTILATION LOCATION (INFRARED ONLY)





Item No.	Item Image	Item Description	Size	SKU
1		Air Return Grill	3"H x 7"W	FDAIR1
2		Open / Close Vent	3"H x 7"W	FDAIRV

OUTDOOR VENTILATION LOCATION (INFRARED ONLY)



Item No.	Item Image	Item Description	Size	SKU
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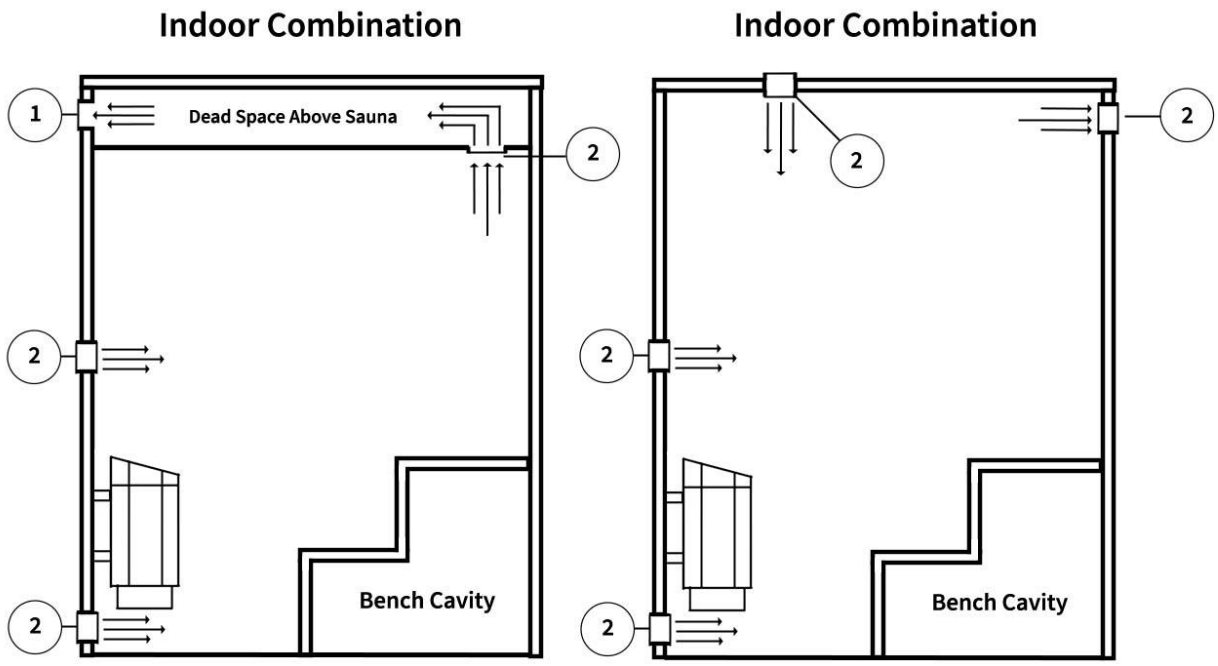
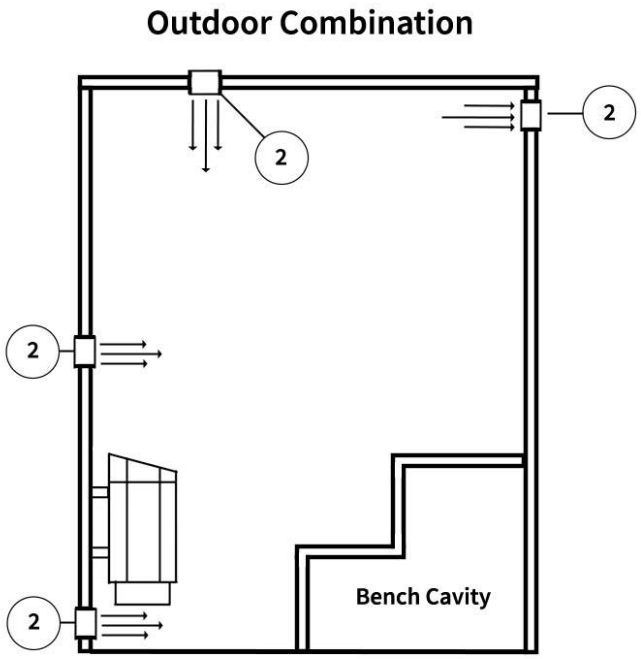
2		Open / Close Vent	3"H x 7"W	FDAIRV

INDOOR VENTILATION LOCATION (COMBINATION)



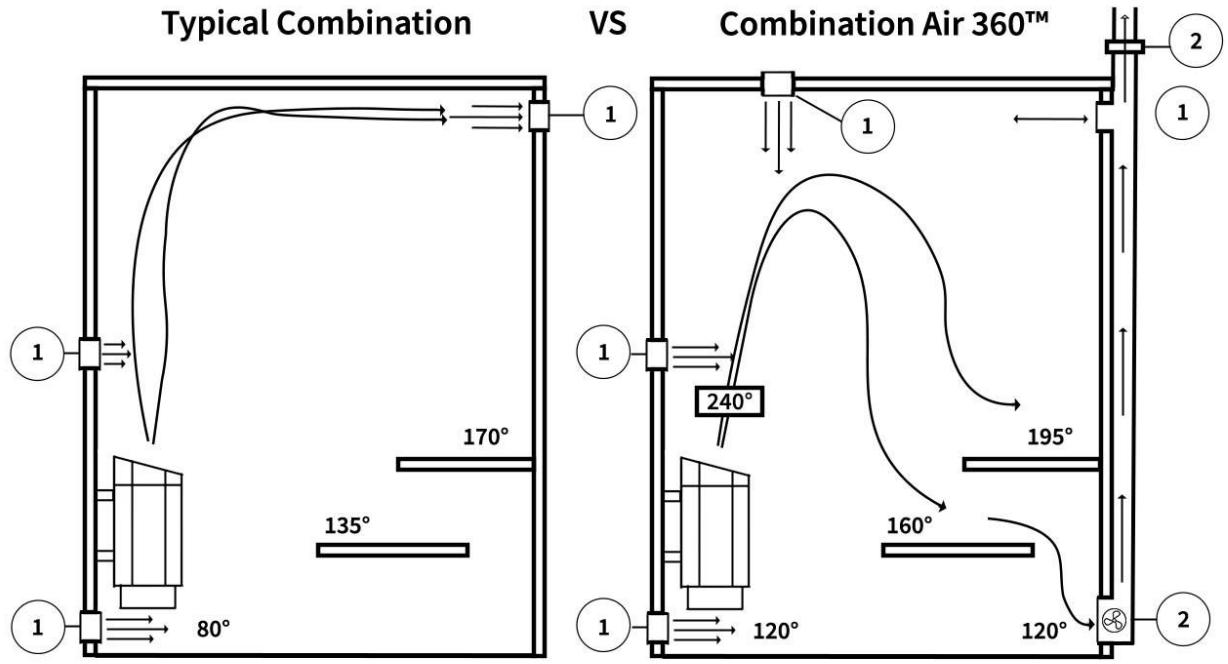
Item No.	Item Image	Item Description	Size	SKU
1		Air Return Grill	3"H x 7"W	FDAIR1
2		Open / Close Vent	3"H x 7"W	FDAIRV

INDOOR VENTILATION LOCATION (COMBINATION)



Item No.	Item Image	Item Description	Size	SKU
1		Air Return Grill	3"H x 7"W	FDAIR1
2		Open / Close Vent	3"H x 7"W	FDAIRV

COMBINATION AIR 360™



Item No.	Item Image	Item Description	Size	SKU
1		Open / Close Vent	3" H x 7"W	FDAIRV
2		Air 360° Mechanical Fan	5"	FDAIR360

PARTS LIST

Part	SKU
UL Listed Spectrum Plus infrared heater	SP250 | SP300 | SP350V | SP208V
Steel frame with temperature resistant coating	SPSF-2
Western Canadian cedar frame bezel	WCCF-R1
Frame bezel wood screws	FBWS-1
Commercial Grade V2 Power Supply	V2PS
IR Power Supply Extension Box	V2-EXT
120v 15a power cable	15PC
120v 20a power cable	20PC
240v 15a power cable	240PC
V2 Controller	V2PS
V2 Controller with WiFi	V2PS-W
V2 Controller data cable (3m)	V2DC
Temperature Sensor	V2TS
Temperature Sensor Mounting Plate & Clip	V2TSM
C14 Jumper Cable (1m)	6EC
C14 Connectors – rewireable	C14-1
4-Pin Audio Cable	AC-180
4-Pin Lighting Cable	V2PC
12v LED RGB Puck Lights	LEDBRGB
12v LED RGB Strip Lights	LEDSTRP
6" Marine Grade Audio Speakers	SPKR6M
Open / Close Vent	FDAIRV
Air Return Grill	FDAIR1
Air 360° Mechanical Fan System	FDAIR360

ADDING A TRADTIONAL HEATER

COMBINATION SAUNA
Spectrum Plus™ infrared sauna heaters are UL listed and can be safely added with a traditional steam heater.

The sauna installation configuration will change.

POWER SUPPLY LOCATION

EXTERIOR INSTALLATION
Mount infrared power supply outside the sauna.

Power supply can be placed into an accessible, well-ventilated cabinet or mounted to the exterior of the sauna.

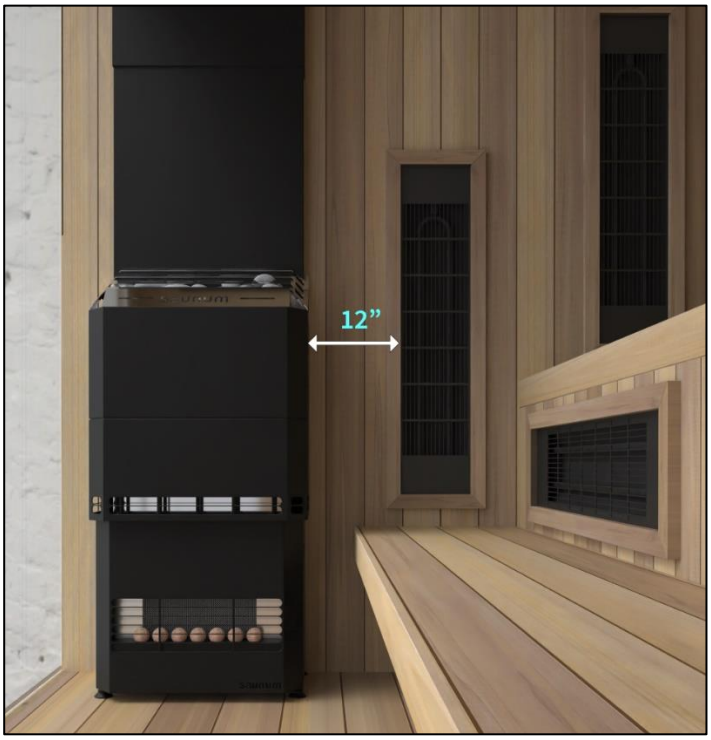
For outdoor applications a waterproof junction box must be installed.

CONTROLLER LOCATION

EXTERIOR INSTALLATION
You must mount our infrared controller on the outside of the sauna when combining a traditional steam heater.

For outdoor applications, the controller must be covered.

HEATER LOCATION



DISTANCE BETWEEN HEATERS
The minimum distance between a Spectrum Plus™ infrared heater and a traditional heater is 12”.

Do Not install a Spectrum Plus™ infrared heater above any traditional heater.

INFRARED TEMPERATURE SENSOR

LOCATION OF SENSOR
When pairing Spectrum Plus infrared heaters with a traditional heater, place the temperature sensor in the ceiling the farthest from the traditional heater.

Do Not install the temperature sensor withing 24” of a traditional heater.

VENTALATION

LOCATION OF VENTALATION
Follow manufacturers guidelines for placement of traditional heater ventilation.

Infrared ventilation is best mounted on the opposite side of the sauna in the ceiling or back wall.

TROUBLESHOOTING

My power supply is plugged in but there is no power to the controller.	Check the power supplies breaker located on the side. If the button is lose, there was not an interruption. If the button clicks, there was an interruption in power, reset by pushing in.
My breaker was not interrupted, and I still do not have power to the controller?	Check the power supplies high limit switch located on the side. Remove the red cap. If the button is lose, there was not an interruption. If the button clicks, there was an interruption in power, reset by pushing in.
My controller turns on when I plug the sauna in but then it shuts right off.	The V2 Controller needs to be reactivated by placing your finger on the screen for 2-3 seconds. Refer to the controller operating instructions.
My speakers crack when music is playing.	Your positive and negative are reversed. Swap the cables to solve the issue.
I have power to my heaters, but the heater is not turning on.	Spectrum Plus infrared heaters can take between 5-7 minutes to start feeling heat. If after 5-7 minutes without the touch of heat check your Neutral and Power connections. Contact manufacturer.

My infrared temperature sensor and the traditional heater sensor do not provide the same reading.	Infrared sauna temperature sensors are calibrated differently. Infrared sensors are calibrated using 5k NTC. Whereas sensors for traditional heaters can vary based on manufacturer.
My power supply immediately shuts off and the breaker pops.	Check wiring and load limits. Refer to your wiring schematic and amperage requirements.
Why is there a slight smell coming from my infrared heaters?	This is completely normal and will subside within the first 2-3 sessions of using the heaters.

INSTALLATION FAQ

Can I choose to use less heaters than what's recommended?	The recommended heater quantities are based on reaching and maintaining 160-170 degrees Fahrenheit. If you use less heaters, the time it takes to reach and maintain 165-170 F will increase.
If I'm using a traditional heater, can I use fewer infrared heaters?	If your bathing goal is to use both at the same time, you can use less infrared heaters and still maintain therapeutic heat. If your bathing goals are to have the ability to reach therapeutic heat while only using infrared heat only, you must follow recommendations.
Can I operate a traditional heater at the same time as infrared?	Spectrum Plus™ UL listed infrared heaters were specifically engineered for this purpose. Unlike carbon heaters, which will fail prematurely under high heat, moisture and steam, Spectrum Plus™ heaters will not.
Can I sit against the infrared heaters?	Spectrum Plus™ heaters were specifically engineered to project infrared heat 360 degrees using a half octagon reflector. This allows for the heat to be evenly distributed to minimize hot spots. This allows users the ability to sit against the heater. For the ultimate bathing experience, purchase an ergonomic backrest.
Where is the best place to mount the temperature sensor?	The temperature sensor must be mounted near the controller and at least 6" down from the ceiling. Heat rises, therefore mounting 6" from the ceiling will render the most accurate results.
If I use a traditional heater with infrared, why can't I mount the controller inside?	A traditional heater produces higher heat along with steam/moisture. Electronic components have a difficult time operating and keeping reliability standards under such harsh conditions.
Can I mount the power supply inside the sauna?	For infrared only sauna builds, the power supply and controller can be mounted inside of the sauna.

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01/24

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Spectrum Plus™ infrared elements are UL listed under UL – UBJY2.E65554